REMARKS

Claims 1-3, 5, 7-9, 11, 13-19, 21-25, and 27-31 remain in this application. Claims 1, 7, 15, 19, 21, and 29 have been amended to define still more clearly what Applicants regard as their invention. Claims 4 and 10 have been canceled without prejudice or disclaimer of subject matter. Claims 6, 12, 20, and 26 had been canceled previously. Claims 1, 7, 15, and 21 are independent.

Claims 1, 5, 7, 11, 13-15, 19, 21, 25, and 27-31 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,501,860 to Charrier et al. Claims 2-4, 8-10, 16-18, and 22-24 were rejected under 35 U.S.C. § 103(a) as being obvious from Charrier et al. in view of U.S. Patent 6,487,318 to Cho.

First, cancellation of Claims 4 and 10 renders the rejections of those claims moot.

The present invention is intended to ameliorate certain problems encountered when transforming digital signals and filtering digital signals. Wavelet transforms provide one filtering technique. These filtering processes are generally performed by subassemblies integrated into the coding and/or decoding assemblies, and often require a large amount of random access memory or buffer space for storing data in the course of processing. For example, in image processing, the most conventional solutions for producing the wavelet transform consist of loading the entire image to be processed into memory and then effecting the different filtering steps. Typically, the memory space is then so large that it is difficult to implement such filterings in devices such as photographic devices, facsimile machines, printers, and photocopiers.

Claim 1 is directed to a method of transforming a digital signal representing a physical quantity into signals of frequency sub-bands distributed in at least two different frequency bands and in at least two different resolutions. The signal is spatially divided into first blocks all having a same predetermined first number of samples. Each of the first blocks is transformed into a plurality of second blocks by a space-frequency transformation, any second block under consideration having a second respective number of samples which depends on the resolution of the second block under consideration and which is inferior to a predetermined third number, and containing samples selected according to their frequency. The method also includes the step of grouping second blocks having the same second number of samples and samples selected according to the same frequency band, and issuing from the transformation of spatially adjacent first blocks, in order to form third blocks all having the predetermined third number of samples.

Charrier et al. relates to digital signal coding and decoding based on subbands. Column 7, lines 41-57, cited in the Office Action, discusses a digital signal coding method including a step of analyzing the digital signal into a plurality of frequency sub-bands distributed in at least two different frequency bands, at least one first sub-band having a lower frequency and at least one second sub-band having a higher frequency. For each second sub-band, the method includes the steps of dividing the second sub-band into blocks, selecting first blocks and second blocks according to a selection criterion, preprocessing the first blocks by applying a first preprocessing mode, preprocessing the second blocks by applying a second preprocessing mode, and coding the sub-band including the preprocessed blocks by applying a third coding mode. Fig. 5, also cited in the Office Action, relates to an image broken down into sub-bands and then divided into

blocks. Fig. 12 relates to a method of coding an image IM, implemented in the coding device. The coding method uses two coding modes which can be allocated to the blocks according to a criterion.

Claim 1 has been clarified to recite that the method spatially divides the signal into first blocks and that the grouping of second blocks relates to second blocks issuing from the transformation of spatially adjacent first blocks. Claim 1 has further been clarified to recite that the first blocks are transformed into second blocks by a space-frequency transformation, as is inherent but not previously specified in Claim 1. Moreover, Claim 1 has been amended to clarify that any second block under consideration has a second respective number of samples which depends on the resolution of the second block under consideration and which is inferior to a predetermined third number.

Applicants submit that nothing in Charrier et al. would teach or suggest first spatially dividing a signal and then transforming it into a frequency-related signal. Furthermore, the Charrier et al. apparatus would need to know in advance the series to be coded, unlike the method of Claim 1. This is because the method of Claim 1 is directed to limiting the amount of data being processed (e.g., see the specification at page 2, lines 12-13), and in this respect uses second numbers inferior to a predetermined third number and groups the second blocks in order to obtain third blocks all having the predetermined third number. The features of limiting the second numbers and grouping the second blocks, as recited in Claim 1, are not found in Charrier et al.

Accordingly, it is respectfully submitted that Claim 1 is patentable over Charrier et al.

Independent Claims 7, 15, and 21 each include features which are similar to those discussed above in connection with Claim 1. Accordingly, Claims 7, 15, and 21 are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as a reference against the independent claims herein. Those claims are therefore believed patentable over the art of record.

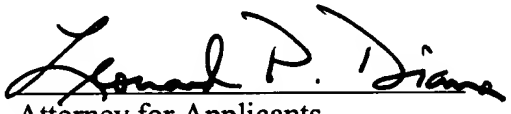
The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

This Amendment After Final Action is believed clearly to place this application in condition for allowance and its entry is therefore believed proper under 37 C.F.R. § 1.116. At the very least, cancellation of Claims 4 and 10 eliminates all issues relating to those claims. Accordingly, entry of this Amendment After Final Action, as an earnest effort to advance prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that issues remain outstanding, the Examiner is respectfully requested to contact Applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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